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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,208	10/01/2003	Mei Wen	007135/CMP/ECP	7685
41161	7590	08/09/2007	EXAMINER	
DUGAN & DUGAN, PC 55 SOUTH BROADWAY TARRYTOWN, NY 10591			WONG, EDNA	
			ART UNIT	PAPER NUMBER
			1753	
			MAIL DATE	DELIVERY MODE
			08/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,208

Applicant(s)

WEN ET AL.

Examiner

Edna Wong

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 5-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

This is in response to the Amendment dated July 3, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Response to Amendment

Election/Restrictions

This application contains claims **5-28** drawn to an invention nonelected without traverse in the reply filed on February 2, 2007. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Specification

The disclosure has been objected to because of minor informalities.

The objection of the disclosure has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 102/103

Claims **1-3** have been rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Dubin et al.** (US Patent No. 7,001,641 B2).

The rejection of claims 1-3 under 35 U.S.C. 102(e) as anticipated by or, in the

alternative, under 35 U.S.C. 103(a) as obvious over Dubin et al. has been withdrawn in view of Applicants' amendment.

Claim Rejections - 35 USC § 103

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Dubin et al.** (US Patent No. 7,001,641 B2) as applied to claims 1-3 above, and further in view of **Hymes** (US Patent No. 6,423,200 B1).

The rejection of claim 4 under 35 U.S.C. 103(a) as being unpatentable over Dubin et al. (US Patent No. 7,001,641 B2) as applied to claims 1-3 above, and further in view of Hymes has been withdrawn in view of Applicants' amendment.

Response to Amendment

Claim Rejections - 35 USC § 112

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1

line 4, it appears that "an agitated rinse" is the same as the agitated rinse recited in claim 1, line 3. However, it is unclear if it is. If it is, then it is suggested that the word "an" be amended to the word -- the --.

Claim Rejections - 35 USC § 102/103

Claims **1-3** are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Walker et al.** (US Patent No. 6,534,863 B2).

Walker teaches a method comprising:

(a) providing a substrate **25** (= a dielectric substrate) having a metal seed layer **23** (Fig. 2A);

(b) applying an agitated rinse to the metal seed layer (= the surface of the seed layer **23** must be cleaned), wherein applying the agitated rinse includes applying sonic energy to a rinse liquid (= wet cleaning with ultrasonics as known in the art) applied to the metal seed layer (col. 4, lines 56-60); and

(c) depositing a metal fill layer **24** (= a first electroplated layer) on the rinsed metal seed layer by electrochemical deposition (col. 4, lines 54-60; and Fig. 2C).

The metal seed layer comprises a copper seed layer (= Cu) [col. 4, lines 43-44].

The providing a substrate having a metal seed layer comprises depositing the metal seed layer on the substrate by physical vapor deposition (= PVD) [col. 4, lines 38-42].

Claim Rejections - 35 USC § 103

Claim **4** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Walker et al.** (US Patent No. 6,534,863 B2) as applied to claims 1-3 above, and further in view of

Lu et al. (US Patent Application Publication No. 2003/0176064 A1).

Walker is as applied above and incorporated herein.

The method of Walker differs from the instant invention because Walker does not disclose wherein both the applying step and the depositing step are performed in the same chamber, as recited in claim 4.

Like Walker, Lu teaches semiconductor processing. Lu teaches that the water-based rinse may be performed in the ECD plating cell, another cell in the plating cluster tool, or a separate tool (page 2, [0030]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method described by Walker with wherein both the applying step and the depositing step are performed in the same chamber because performing the water-based rinse in the ECD plating cell, another cell in the plating cluster tool, or a separate tool would have equally removed surface contaminants and improved the wetting characteristics of the seed surface as taught by Lu (page 2, [0029] and [0030]).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

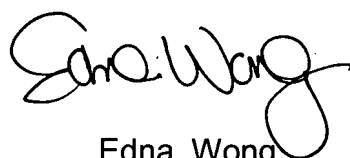
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Art Unit: 1753

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "Edna Wong". The signature is fluid and cursive, with the first name "Edna" and last name "Wong" clearly distinguishable.

Edna Wong
Primary Examiner
Art Unit 1753

EW
August 4, 2007